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Lindsey Lin

Applicant	:	Samuel T. Barone, Jr., et al.	Confirmation No. 4459
Application No.	:	09/840,497	
Filed	:	April 23, 2001	
Title	:	SYSTEM AND METHOD FOR MERGING INTERACTIVE TELEVISION DATA WITH CLOSED CAPTION DATA	
Grp./Div.	:	2611	
Examiner	:	Harun M. Yimam	
Docket No.	:	42244/G476	

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

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September 14, 2006

Commissioner:

In response to a Notification of Non-Compliant Appeal Brief dated August 31, 2006, Appellant submits this amended appeal brief. This is an appeal from the final Office Rejection dated November 15, 2005.

1. REAL PARTY IN INTEREST

The real party in interest is GoldPocket Interactive, Inc., assignee of the application, which is a subsidiary of Tandberg Television Ltd.

2. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences presently pending.

3. STATUS OF CLAIMS

Claims 1-30 are pending in the application. No claims have been allowed. The rejection of claims 1-30 is appealed.

4. STATUS OF AMENDMENTS

No amendments were filed after the final Office action dated November 15, 2005.

5. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention relates to an interactive television (ITV) system that includes an ITV data source 14 that provides ITV data and a closed caption (CC) data source 12 that provides CC data. (See, FIG. 1). The CC data has a higher priority than the ITV data. (Specification, p. 2, line 27-28). The ITV data and CC data is received by a data processor 10 which merges the ITV data with the CC data and outputs the merged data to a data encoder 16. The data encoder 16 receives a television video signal from a television program source 18 and encodes the merged ITV and CC data into the television video signal.

A description of how an ITV data stream is merged into a CC data stream is described in the specification starting on page 6, line 21 with reference to FIG. 6. In step 240, the data processor 10 identifies originally assigned time slots for an ITV message made up of one or more ITV data units. In step 242, a determination is made as to whether a gap exists in the CC data stream at the originally assigned time slots. If a gap exists, a determination is made in step 244 as to whether the gap is large enough to contain the entire ITV message. If the gap is large enough, the data processor 10, in step 246, places the entire ITV message into the identified gap. If the gap is not large enough, the data processor 10, in step 250, segments the ITV message and distributes the segments over various gaps. If, however, no gap exists at the desired time slots, the data processor 10, in step 248, segments the payload portion of the conflicting CC message and creates a gap for inserting at least the ITV command data as close to the desired time slot as possible without disrupting the integrity of the CC message. (Specification, p. 4, lines 32-35).

FIG. 8 illustrates an exemplary CC data stream 110, and exemplary ITV data stream 112,

and a merged data stream 114 created by segmenting a conflicting CC message. The CC data stream includes CC data units including CC command data 116 and CC payload data 118. (Specification, p. 13, lines 18-20). The ITV data stream 112 includes ITV data units including ITV command data 200 and ITV payload data 202. The ITV command data 200 is preferably a reveal command for triggering the display of the ITV content transmitted as the ITV payload data. (Id. at lines 23-27).

In the example illustrated in FIG. 8, time slots 10-13 originally assigned to the ITV data units conflict with the CC payload data 118. To resolve the conflict, the data processor 10 segments the CC data in order to make room for at least the ITV reveal command and a resume caption load ("RCL") command. (Specification, p. 13, line 33 - p. 14, line 1). Specifically, the data processor 10 segments the CC payload data 118 and moves it to available earlier time slots. (Specification, p. 14, lines 11-13). In the illustrated example, the payload data 118 is moved to time slots 2-5, causing its build process to begin earlier in time than initially anticipated. (Id. at lines 16-19). The RCL command is inserted into time slots 12 and 13, and the ITV reveal command is assigned to the next available time slots 10 and 11. (Id. at lines 21-28).

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1-10 and 17-22 are unpatentable under 35 U.S.C. 103(a) over Bertram (U.S. Publication 2002/0064177) in view of Feinleib (U.S. Patent No. 6,637,032).

2. Whether claims 11 and 23 are unpatentable under 35 U.S.C. 103(a) over Bertram in view of Feinleib, and further in view of Landis (U.S. Patent No. 5,428,400).

3. Whether claims 12 and 24 are unpatentable under 35 U.S.C. 103(a) over Bertram in view of Bauchot (U.S. Patent No. 6,141,336).

4. Whether claims 13-15 and 25-27 are unpatentable under 35 U.S.C. 103(a) over Bertram in view of Bauchot and further in view of Feinleib.

5. Whether claim 16 is unpatentable under 35 U.S.C. 103(a) over Bertram and Bauchot in view of Feinleib and further in view of Landis.

6. Whether claim 28 is unpatentable under 35 U.S.C. 103(a) over Bertram and Bauchot and further in view of Landis.

7. Whether claims 29 and 30 are unpatentable under 35 U.S.C. 103(a) over Feinleib in view of Landis.

7. ARGUMENT

The Examiner's rejection of claims 1-30 should be reversed because the Examiner has failed to establish a *prima facie* case of obviousness with respect to these claims.

A. Introduction.

It is axiomatic that "[i]n proceedings before the patent and Trademark Office, the Examiner bears the burden of establishing a *prima facie* case of obviousness based upon the prior art." *In re Flitch*, 972 F.2d 1260 (Fed. Cir. 1992). This burden is satisfied "only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *Id.* (quoting *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988)). In rejecting the claims under appeal, the Examiner has failed to meet this burden.

B. The Examiner Has Failed to Establish a Prima Facie Case of Obviousness for Claims 1-11 and 17-23.

Claims 1, 5, and 17 are written in independent form with claims 2-4, 6-11, and 18-23 depending directly or indirectly from an independent claim. The Examiner rejects claims 1, 5, and 17 as obvious over Bertram in view of Feinleib.

Independent claim 1 recites a "processing unit . . . characterized in that the processing unit creates a gap in the first data stream for inserting at least a portion of data carried by the second data stream." (Emphasis added). Claims 5 and 17 similarly recite "creating a gap between two first data units in the first data stream."

The Examiner relies on the transport multiplexer disclosed in Bertram to contend that it discloses the recited processing unit. (See, Bertram, FIG. 4, reference 470) (11/15/05 Office action, p. 5). The Examiner contends that Bertram's transport multiplexer creates a gap by detecting a null packet in a first data stream to insert a portion of data carried by a replacement data stream into the first data stream. (Id. at pp. 5-6). Applicant respectfully disagrees.

Bertram's transport multiplexer does not create any gaps in either the first data stream or a multiplexed output data stream. If Beltram's NULL packets are deemed to be the claimed gaps, Beltram's first data stream comes with preexisting gaps, that is, with preexisting NULL packets, as is illustrated in FIG. 4. Beltram's transport multiplexer simply detects a preexisting NULL packet in the first data stream and instead of inserting the NULL packet in the multiplexed output stream, inserts a replacement packet. (Bertram, par. 0038). This ensures that packets are inserted into the output transport stream without modifying previously established timing and distance relationships of the packets in the first transport stream. If the transport multiplexer were to actually create a gap as is required by claim 1, the established timing and distance relationships of the packets would be altered, rendering Bertram's system ineffective for its intended purpose. Accordingly, claims 1, 5, and 17 are in condition for allowance for this reason alone.

Even if assuming, *arguendo*, that Bertram were to disclose a processing unit that "creates a gap in the first data stream," claims 1, 5, and 17 would still be in condition for allowance because Bertram fails to teach or even suggest that the disclosed first and second transport streams which are multiplexed together are for the same "particular television program." In contrast, claims 1 and 5 recite an interactive television system comprising "a first input for receiving a first data stream for a particular television program" and a "second input for receiving a second data stream for the particular television program." Claim 17 recites "a method for merging a first data stream for a particular television program . . . with a second data stream for the particular television program . . .". Thus, in claims 1, 5, and 17, both the first and second data streams are for the same "particular television program."

The Examiner contends that Bertram discloses a first data stream, that is, a first transport stream T_{IN1}, as well as a second data stream that is, a second transport stream T_{IN2}. (11/15/05 Office action, section 7). Each of Bertram's transport streams is an MPEG transport stream divided into N slots. (Bertram, 0009). Bertram teaches that "each of N information stub-streams [sic] within an information stream comprises a program (e.g., image information and related audio information such as a movie or television program)." (Bertram, 0022). Thus, each transport stream is associated with a different program. Bertram teaches sequentially

multiplexing a transport packet from each of the transport streams T_{IN1} and T_{IN2} to form a multiplexed transport stream T_{OUT}. (Bertram 0032). Thus, the output transport stream T_{OUT} merges transport packet streams of different programs, and not of the same "particular television program" as is recited in claims 1, 5, and 17.

The Examiner agrees that Bertram fails to disclose that first and second data streams are for a particular television program. (11/15/05 Office action, section 7, p. 6). However, he relies on Feinleib to make up for this deficiency. In doing so, the Examiner proposes replacing Bertram's first transport stream with a primary program that supports closed captioning, and further replacing Bertram's second transport stream with enhancing/ITV content used to enhance the primary content. (Id.) The alleged motivation for this modification of Bertram is "for the benefit of utilizing enhancing content to enhance a particular television program." (Id.) Applicant respectfully submits that a person of skill in the art would have had no motivation to modify Bertram in the manner proposed by the Examiner.

First, Feinleib is directed to a system and method for synchronizing enhancing content with a video program using closed captioning. In its discussion of delivering the enhancing content and the closed captioning data, Feinleib makes no mention of the desirability of doing it via slotted MPEG transport streams, such as the slotted MPEG transport streams as is disclosed in Bertram.

Second, Bertram's system already allows the use of enhancing content to enhance a particular television program, and the modification of Bertram in the manner proposed by the Examiner does nothing to make the use or transportation of the enhancing content more efficient or desirable over Bertram's existing mechanism. Specifically, Bertram teaches the use of the MPEG transport mechanism where each program is a collection of individual elementary streams, such as video, audio, and other bit streams. (See Bertram, par. 0003). Thus, even if a person of skill in the art would find it desirable to use enhancing content to enhance a particular television program, he would use Bertram's existing mechanism for transmitting the enhancing content. That is, the enhancing content would be transmitted via its own elementary stream, and would not be merged into a closed caption stream in the manner proposed by the Examiner.

Thus, the Examiner has failed to make a *prima-facie* case of obviousness with respect to claims 1, 5, and 17. Claims 1, 5, and 17 are therefore patentable.

Claims 2-4, 6-11, and 18-23 are also patentable because they depend directly or indirectly from an independent claim, and because they contain additional limitations that distinguish them from the cited references.

C. The Examiner Has Failed to Establish a Prima Facie Case of Obviousness for Claims 12-16 and 24-28.

Claims 12 and 24 are written in independent form with claims 13-16 and 25-28 depending directly or indirectly from an independent claim. The Examiner rejects claims 12 and 24 as obvious over Bertram in view of Bauchot.

With respect to claim 12, the Examiner acknowledges that "Bertram fails to disclose that the processing unit includes logic for: identifying time slots assigned to the plurality of first data units in the first data stream; reassigning a portion of the plurality of first data units assigned to particular time slots to earlier time slots; and assigning at least a portion of the plurality of second data units in the second data stream to the particular time slots." (11/15/05 Office action, p. 12). The Examiner, however, relies on Bauchot to make up for this deficiency.

First, Applicant respectfully disagrees that Bauchot is analogous prior art. It is well settled that a prior art reference must either be in the field of Applicant's endeavor or if not, be reasonably pertinent to that particular problem with which the Applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. *See, In re Oetiker*, 977 F.2d 1443 (Fed. Cir. 1992). The Examiner contends that Bauchot is in the field of Applicant's endeavor because Bauchot "pertains to the filed of transmitting information from one point to another." (11/15/05 Office action, p. 3, last par.). Applicant disagrees with the characterization of Applicant's field of endeavor in such general terms. As opposed to the Examiner's characterization, the present invention is directed to an "interactive television system." On the other hand, Bauchot is concerned about exchanging data between an asynchronous (ATM) network and a synchronous network. Thus, Bauchot is not in the field of Applicant's endeavor.

Furthermore, the problem Bauchot is concerned with is not at all pertinent to the problem with which Applicant is concerned. Bauchot is especially concerned about the delay constraints

of the connections used to transmit data cells, and proposes using the arrival time of the data cells for determining a deadline of each cell before which the cell has to be transmitted in order to meet a required quality of service. (Col. 2, lines 47-60). In contrast, the problem which Applicant was concerned is the problem of time conflicts in merging closed caption data and interactive television data.

Second, even if, *arguendo*, Bauchot were analogous prior art, a person of skill in the art would have no motivation to modify Bertram based on the teachings of Bauchot so that a "portion of the plurality of first data units" are reassigned to earlier time slots. (Emphasis added). Bertram requires that:

> "the relative position of each packet associated with a particular program remains the same with respect to the other packets within the program. Thus, one program will not be affected by modifications made to another program, as long as the modification do not affect the relative position of the packets in the one program." (page 2, par. 0025, lines 5-10).

If only a portion of Bertram's data stream were reassigned to earlier time slots, this would not ensure that "the relative position of each packet associated with a particular program remains the same with respect to the other packets within the program." Thus, the Examiner has failed to make a *prima-facie* case of obviousness with respect to claim 12. Claim 12 is therefore patentable.

Independent claim 24 includes limitations that are similar to the limitations of claim 12, which make claim 12 patentable. Thus, claim 24 is also patentable.

Claims 13-16 and 25-28 are also patentable because they depend directly or indirectly on claims 12 or 24, and because they contain additional limitations that distinguish them from the cited references.

D. The Examiner Has Failed to Establish a Prima Facie Case of Obviousness for Claims 29 and 30.

Claim 29 is written in independent form with claim 30 depending on claim 29. The Examiner rejects claims 29 and 30 as obvious over Feinleib in view of Landis.

First, claim 29 requires that the "ITV data stream" include "ITV reveal command data and ITV payload data." Nothing in Feinleib teaches or suggests an "ITV data stream" that includes these two separate types of data. The Examiner contends that Feinleib's URL, trigger, or application name constitutes the "ITV reveal command data," and Feinleib's web page and graphical data constitutes the "ITV payload data." (2/3/06 Advisory Action, section 11, par. 4). Feinbleib's web page and graphical data, however, is not part of the same "ITV data stream" that includes the "ITV reveal command," and which is merged with a closed caption data stream as is claimed in claim 29.

Second, claim 29 requires "determining whether the ITV reveal time slot is available." (Emphasis added). The Examiner contends that this is disclosed because in Feinleib, a producer determines at which point in the program to insert ITV data. (2/3/06 Advisory Action, section 11, par. 5). The producer in Feinleib, however, adds supplemental data based on particular closed captioning text, and not based on any determining of availability (or non-availability) of a time slot. In fact, Feinleib makes no mention of any kind of "time slot." Although the closed captioning script in Feinleib includes closed captioning text, there is nothing to indicate that the script also includes time slots that could be investigated for availability, and that could be assigned to closed caption data and ITV reveal command data.

Third, claim 29 requires "reassigning the segmented closed captioning payload data to one or more time slots earlier than the ITV reveal time slot." (Emphasis added). The Examiner contends that this is disclosed because in Feinleib, ITV related data is inserted in between "Oh, hi how" and "are you." (11/15/05 Office action, p. 16). Thus, the Examiner concludes that "Oh, hi how" is reassigned to one or more time slots earlier than the ITV reveal time slot. However, such a conclusion is unsupported by Feinleib. Feinleib makes no mention of "reassigning the segmented closed captioning payload data to one or more time slots earlier than the ITV reveal time slot." Nothing in Feinleib teaches or suggests that the inserting of ITV data in between "Oh, hi how" and "are you" effects the time slots assigned to this closed captioning data. Accordingly, the Examiner has failed to make a *prima-facie* case of obviousness with respect to claim 29. Claim 29 is therefore patentable.

Claim 30 is also patentable because it depends on claim 29, and because it contains additional limitations that distinguish it from the cited references.

E. Claims 4, 10, 15, 22, and 27 are Separately Patentable for their Recitation of an ITV Reveal Command that is Inserted into the Gap of a First Data Stream.

Claims 4, 10, 15, 22, and 27 are separately patentable over the prior art as they require the insertion of a "reveal command" in a gap created in the first data stream, "the reveal command commanding a receiver to display the interactive content." However, the Examiner contends that the program streams in Bertram "inherently includes reveal commands," and relies on Bertram's disclosure on paragraph 0058, lines 9-13 as support. (11/15/05 Office action, p. 7). Although Bertram teaches on paragraph 0058 that a user may "interactively control the delivery of audio-visual information using consumer-friendly commands, such as fast-forward (FF), rewind (REW), pause (PAUSE), play (PLAY) and the like," nothing in Bertram teaches or suggests that such commands are included in the program streams. Instead, a person of skill in the art would understand those commands as being provided via buttons on a remote controller. Furthermore, nothing in Bertram teaches or suggests that the recited "reveal command" be used for "commanding a receiver to display the interactive content." Accordingly, the Examiner has failed to set forth a *prima facie* case of obviousness for claims 4, 10, 15, 22, and 27. Claims 4, 10, 15, 22, and 27 are therefore patentable.

F. Conclusion.

For these reasons, all pending claims 1-30 are patentable over the art of record and in condition for allowance. Reversal of the Examiner's decision is urged.

Respectfully submitted,

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8. CLAIM APPENDIX

1. An interactive television (ITV) system comprising:

a first input for receiving a first data stream for a particular television program;

a second input for receiving a second data stream for the particular television program, the first data stream having a higher priority than the second data stream; and

a processing unit coupled to the first input and the second input, characterized in that the processing unit creates a gap in the first data stream for inserting at least a portion of data carried by the second data stream, the gap being selected in a location in the first data stream so as to allow the data carried by the second stream to be effectively displayed without disrupting display of data carried by the first data stream.

2. The system of claim 1, wherein the data carried by the first data stream is closed caption data.

3. The system of claim 1, wherein the data carried by the second data stream is interactive television data including interactive content.

4. The system of claim 3, wherein a reveal command is inserted in the gap, the reveal command commanding a receiver to display the interactive content.

5. An interactive television system comprising:

a first input for receiving a first data stream for a particular television program, the first data system having a plurality of first data units;

a second input for receiving a second data stream for the particular television program, the second data stream having a plurality of second data units; and

a processing unit coupled to the first input and the second input, the processing unit including logic for:

creating a gap between two first data units in the first data stream;

inserting a first portion of the plurality of second data units into the created gap;

detecting another gap in the first data stream; and

electronically inserting a second portion of the plurality of second data units into the detected gap.

6. The system of claim 5, wherein the plurality of first data units are closed caption data units.

7. The system of claim 5, wherein the plurality of second data units are interactive television data units including interactive content.

8. The system of claim 5, wherein the created and detected gaps are time slots in a television signal containing no data units.

9. The system of claim 8, wherein the created gap is as close to a desired reveal time as possible.

10. The system of claim 5, wherein the first portion of the plurality of second data units includes a reveal command commanding a receiver to display interactive content.

11. The system of claim 5, wherein the two first data units are closed caption payload data displayed by a receiver in response to a closed caption reveal command.

12. An interactive television system including:

a first input for receiving a first data stream having a plurality of first data units;

a second input for receiving a second data stream having a plurality of second data units; and

a processing unit coupled to the first input and the second input, the processing unit including logic for:

identifying time slots of a television signal assigned to the plurality of first data units in the first data stream;

reassigning a portion of the plurality of first data units assigned to particular time slots to earlier time slots; and

assigning at least a portion of the plurality of second data units in the second data stream to the particular time slots.

13. The system of claim 12, wherein the plurality of first data units are closed caption data units for a particular television program.

14. The system of claim 13, wherein the plurality of second data units are interactive television data units including interactive content for the particular television program.

15. The system of claim 14, wherein the portion of the plurality of second data units includes a reveal command commanding a receiver to display the interactive content.

16. The system of claim 13, wherein the portion of the plurality of first data units includes closed caption payload data displayed by a receiver in response to a closed caption reveal command.

17. In an interactive television system, a method for merging a first data stream for a particular television program, the first data system having a plurality of first data units, with a second data stream for the particular television program, the second data stream having a plurality of second data units, the first data stream having a higher priority than the second data stream, the method comprising:

creating a gap between two first data units in the first data stream;

inserting a first portion of the plurality of second data units into the created gap;

detecting another gap in the first data stream; and

electronically inserting a second portion of the plurality of second data units into the detected gap.

18. The method of claim 17, wherein the plurality of first data units are closed caption data units.

19. The method of claim 17, wherein the plurality of second data units are interactive television data units including interactive content.

20. The method of claim 17, wherein the created and detected gaps are time slots in the television signal containing no data units.

21. The method of claim 20, wherein the created gap is as close to a desired reveal time as possible.

22. The method of claim 17, wherein a reveal command is inserted in the gap, the reveal command commanding a receiver to display the interactive content.

23. The method of claim 17, wherein the two first data units are closed caption payload data displayed by a receiver in response to a closed caption reveal command.

24. In an interactive television system, a method for merging a first data stream having a plurality of first data units with a second data stream having a plurality of second data units for transmitting in a television signal, the first data stream having a higher priority than the second data stream, the method comprising:

identifying time slots of the television signal assigned to the first data units in the first data stream;

reassigning a portion of the first data units assigned to particular time slots to earlier time slots; and

assigning at least a portion of the plurality of second data units in the second data stream to the particular time slots.

25. The method of claim 24, wherein the plurality of first data units are closed caption data units.

26. The method of claim 24, wherein the plurality of second data units are interactive television data units including interactive content.

27. The method of claim 26, wherein the portion of the plurality of second data units includes a reveal command, the reveal command commanding a receiver to display the interactive content.

28. The method of claim 24, wherein the portion of the plurality of first data units includes closed caption payload data displayed by a receiver in response to a closed caption reveal command.

29. In an interactive television (ITV) system, a method for merging a closed caption data stream and an ITV data stream, the closed caption data stream including closed caption reveal command data and closed caption payload data, and the ITV data stream including ITV reveal command data and ITV payload data, the method comprising:

identifying an ITV reveal time slot for the ITV reveal command data, the ITV reveal command data commanding a receiver to display ITV content associated with the ITV payload data;

determining whether the ITV reveal time slot is available;

responsive to a determination that the ITV reveal time slot is assigned to the closed caption payload data:

segmenting at least the closed caption payload data assigned to the ITV reveal time slot; and

reassigning the segmented closed captioning payload data to one or more time slots earlier than the ITV reveal time slot; and

assigning the ITV reveal time slot to the ITV reveal command data.

30. The method of claim 29, wherein the closed caption reveal command data commands the receiver to display closed caption content associated with the closed caption payload data, the method further comprising:

responsive to a determination that the ITV reveal time slot is assigned to the closed caption reveal command data:

segmenting at least a portion of the closed caption payload data assigned to one or more time slots preceding the ITV reveal time slot;

reassigning the segmented closed caption payload data to one or more time slots earlier than the one or more time slots preceding the ITV reveal time slot; and

assigning the one or more time slots preceding the ITV reveal time slot to at least the ITV reveal command data.

9. EVIDENCE APPENDIX

None

10. RELATED PROCEEDING APPENDIX

None

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